Claims

1. An electrode system, in particular for the lamp industry, comprising at least one foil (4) as a first part of the electrode system having a metallic base body of molybdenum, pure or doped, and a pin-like supply conductor (2) made from metal as second part of the electrode system, predominantly or completely comprising molybdenum or tungsten, the two parts (2, 4) being joined to one another, characterized in that a join is realized between the pin-like supply conductor (2) at its end facing the foil (4) and the foil (4) by combined welding and soldering as a result of at least one central welded region (6) being surrounded by a halo (7) of a high-temperature soldered join.

2. The electrode system as claimed in claim 1, characterized in that the coating consists of pure ruthenium or a ruthenium compound or alloy, in particular a eutectic molybdenum-ruthenium alloy, with a layer thickness of between 0.02 and 5 µm.

3. The electrode system as claimed in claim 2, characterized in that the coating is applied to the foil, in a layer thickness of between 0.02 and 0.1 µm.

4. The electrode system as claimed in claim 2, characterized in that the coating is applied to the supply conductor, in a layer thickness of between 0.1 and 5 µm.

5. The electrode system as claimed in claim 1, characterized in that the pin-like supply conductor (2), at its end facing the foil (4), has a flattened portion (3), in the region of which the join to the foil (4) is made.

6. The electrode system as claimed in claim 1, characterized in that the welded region is in the form of a spot, a circle or elongate in form.

7. The electrode system as claimed in claim 1, characterized in that two welded regions are used to produce the join.

8. The electrode system as claimed in claim 1, characterized in that a coating (5, 8), in particular a ruthenium-containing coating, is at least partially applied to at least one of the two parts.

9. The electrode system as claimed in claim 1, characterized in that the flattened portion (3) is from 50 to 200 µm thick.

10. The electrode system as claimed in claim 1, characterized in that the pin-like supply conductor (2) has a diameter of from 0.1 to 0.6 mm.

11. The electrode system as claimed in claim 1, characterized in that a further supply conductor is secured to the foil (4) in a similar way.

12. The electrode system as claimed in claim 1, characterized in that the foil (4) is doped with yttrium oxide, in particular in an amount of from 0.5 to 1.5%.

13. The electrode system as claimed in claim 1, characterized in that the spot welded join (6) has a diameter of at most 150% of the diameter of the pin-like part.

14. The electrode system as claimed in claim 1, characterized in that the diameter of the halo (7) amounts to at most 130% of the diameter of the spot welded join (6).

15. A lamp comprising the electrode system as claimed in claims 1 to 14.

16. A lamp comprising a lamp vessel (36) made from quartz glass or hard glass with a high SiO_2 content, which at least at one end is provided with a pinch seal (37) and with inner and outer current feeds (40, 34) and contains a luminous means (39) and if appropriate a fill, the lamp being provided with at least one electrode system as claimed in claim 1, characterized in that the supply conductor is realized by the outer current feed (34), inner current feed (40) or if appropriate an electrode shank.

17. A process for producing a join between parts of an electrode system which includes at least one foil (4) as first part and a pin-like supply conductor (2) as second part, characterized by the following steps:

- providing the two parts as joining partners;
- producing mechanical contact between the two joining partners;
- contactless welding of the two joining partners by means of high-energy radiation, so that the introduction of heat is sufficient to form a central spot welded join which is surrounded by a halo of a high-temperature soldered join.

18. The process as claimed in claim 17, characterized in that the second part is arranged on that side of the first part which faces the radiation.

19. The process as claimed in claim 17, characterized in that the pin-like supply conductor is flattened at its end which is to be joined prior to mechanical contact being made.

20. The process as claimed in claim 17, characterized in that at least one of the two parts is coated with a material which promotes the soldering, in particular ruthenium-containing material, before mechanical contact is made.